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09/869,150	06/25/2001	Christopher S Winter	36-1448	1217

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EXAMINER

BLACK, LINH

ART UNIT

PAPER NUMBER

2177

DATE MAILED: 07/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/869,150

Applicant(s)

WINTER ET AL.

Examiner

LINH BLACK

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This communication is responsive to paper No. 5, the Amendment B dated 2/6/04.

- Claims 1-32 are pending in this application. Claims 1, 3-5, 7-8, 10-12, and 16-17 have been amended. Claims 1 and 17 are independent claims. Claims 18-32 are new claims.
- The objection to the specification of this invention has been withdrawn responding to the amendment, paper no. 5.
- Claim 16's rejection has been withdrawn in view of the claim's amendment.
- The objection to the drawings of this invention has been withdrawn responding to the amendment, paper no. 5.
- The objections to claims 3-5 and 7 of this invention have been withdrawn responding to the amendment, paper no. 5.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

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said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hemmje M. et al. "LyberWorld – A Visualization User Interface Supporting Fulltext Retrieval", July 3, 1994, pp. 249-259, XP00475325 , and further in view of Bryan et al. (USP 6664980).
2. As per claim 1, Hemmje et al. teach "a method of selecting information stored in a data storage system" – the abstract; page 256 – lines 27-41.

"defining at least one sort statement" – p. 252, lines 27-33; p. 256, lines 3-14 and lines 27-41. Retrieved documents are displayed in different levels, for example, users can decide to follow the search result by selecting an element/document to become the current item and requests to unfold its term sublevel – line 6. In other words, a sort statement would be performed when a user selects an item, starts clustering activities, increases terms' attractions, or reduces the document density in order to choose the most relevance documents to the search terms. Elements/documents are sorted and displayed in relevant positions to the searched term nodes to reflect their relevancies on the display – page 253, lines 28-30. In addition, NavigationCones implement navigations by unfolding alternating tree levels of term and document view – page 252, lines 28-32. Thus, terms and documents are sorted into tree levels, which would be displayed to users based on users' navigations.

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"determining the value of a relevance parameter for each data file in the stored information in respect of the or each sort statement" – p. 252, lines 27-33, especially lines 32-33 - "These relevance values are provided by INQUERY's ranking mechanisms"; p. 253, last paragraph.

"defining at least one sort statement site on a display means, wherein a sort statement site represents a respective sort statement" – page 256, lines 27-41; page 253, fig. 6: the term nodes u, q, r, s, t, p, etc...corresponds to the sort statement sites; page 255, fig. 15 and lines 13-18 (The interactive manipulation ...enforced term remain constant between themselves).

In the specification, pages 4-5, applicants state that "the step of defining the or each sort statement sites comprises the step of selecting a respective position on the display means which corresponds to a point on the circumference of a circle." However, Hemmje et al. disclose, "the user is provided with an interactive relevance feedback mechanism. He can express a higher/lower interest in a specific term and the related document cluster by in/decreasing the term symbol's attraction towards its documents" – page 255, lines 10-12; Fig. 15.

"representing the data files as elements on the display means" – page 256, lines 31-41; page 253, fig. 6: the document nodes correspond to the elements; page 259, screen 4.

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“effecting movement of at least one element from an initial position on the display means towards one or more sort statement sites, the direction of movement of respective elements being determined in accordance with the relevance parameter for their associated data files in respect of each statement so that differences in the data files cause the elements to move relative to one another, thereby to provide a visual indication of the data files being sorted on the display” – page 253, figs. 6-8; page 256, lines 31-41; page 255, figs. 13-15: elements are sorted after users increase the attraction factor of the term solar and the new-sorted relevant positions of elements g, d, c changed, they are moved closer to the term node solar because of their relevancies. Also, based on their new positions, the document/element c (fig. 15) is the most relevant document to the term node solar.

Hemmje et al. do not fairly suggest “the speed” of movement in the limitation above. However, Bryan et al. teach visual navigation utilizing web technology” – the title. Bryan et al. teach a system which automatically obtains information based on visual indicia selection and navigation – col. 1, lines 8-9. Bryan et al. teach the speed of movement of respective elements – figs. 18-21; col. 18, lines 28-63. Thus, it would have been obvious to one of ordinary skill in the art to combine Bryan et al.’s teaching with Hemmje et al.’s teaching in order to show users the degree of data relevancy when users interact with the visual searching interface.

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3. The independent claim 17 relates to a system corresponding to the method of claim 1. However, in combination with Byan et al., Hemmje discloses a method as well as the system of using the method set forth in the rejection of claim 1 above – page 249, second paragraph and Fulltext Retrieval System INQUIRY: last line; page 252, lines 27-38; page 255, last paragraph; page 256, second last paragraph; page 257, lines 4-21; display means: page 259.

4. As per claim 2 by the following:

“the step of accessing data in the selected data file” – page 256, lines 38-41.

5. As per claims 3 and 20 by the following:

“the step of determining the value of the relevance parameter for each data file, for each sort statement, comprises the step of identifying the most relevant data file for each sort statement, assigning it a maximum relevance parameter value and determining respective normalized values for the rest of the data files based on said maximum relevance parameter value.” – page 255, figs. 13-16, lines 2-24 (in fig. 13, the most relevant data file x is identified – line 4; data file x has the maximum relevance parameter value, it defines the sphere radius. Based on this normalized value, all other relevant data files' normalized values are also determined and “a cluster of documents with positions very close to the sphere's center is displayed. This situation has occurred because the displayed distance

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values are high, i.e. the relevance of the cluster is low compared to the most relevant document x" – lines 1-4; also page 256, lines 27-41.

6. As per claims 4 and 21 by the following:

"the step of moving the elements comprises the step of determining a movement vector for each element based on the magnitude of the normalized values of the respective data file and the direction of relevant sort statement sites relative to the element" – page 253, figs. 6-8; page 254, lines 4-7 and lines 26-28 (The Relevance Sphere ... satisfy the Boolean query predicate (A & B & C)); page 255, figs. 13-16 and lines 1-12; page 256, lines 31-36 (Note: sort statement sites correspond to term nodes and elements correspond to document nodes/data files).

7. As per claims 5 and 22 by the following:

"wherein the step of determining a movement vector for each element comprises the step of determining a component movement vector for the element in respect of each sort statement based on the magnitude of the respective normalized value of the respective data file for the sort statement and the direction of the respective sort statement site to that element, and **summing** the component movement vectors" - p. 253, lines 11-12 teaches "The position of each document symbol encodes the sum of all attractions, i.e. the relevance of the document towards each term of the query"; page 254, lines 4-8 suggests attraction/movement vectors are defined between a document and its paths in

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fig. 7, and the displaying of the generation of a document's position in the sphere with respect to the whole search path's vectors and the sphere's center as an anchor point; page 255, figs. 13-16 and lines 1-12; page 256, lines 31-36.

8. Hemmje et al. anticipated claims 6 and 23 by the following:

"wherein the elements move in steps and a movement vector is determined for each step" – page 253, figs. 6-8; page 254, lines 4-7 (where attraction vectors are defined between a document and its paths in fig. 7, and the displaying of the generation of a document's position in the sphere with respect to the whole search path's vectors and the sphere's center as an anchor point); page 256, lines 29-36.

In the specification, page 14, applicants suggest "As can best be seen with reference to Figure 6, when the elements are moved in step 26 individual elements move relative to one another. The position of the elements in Figure 6 represents say one hundred movement steps....Element 114 thus moves towards the sort statement site at 108 at a rate of 25% of the predetermined number of pixels per step." However, "per step" that each relevant element/document moves to its new position is dependent on movement/attraction vector(s) that is/are determined by the number of item node(s).

According to Hemmje et al., in fig. 15, as a user increases the attraction factor of the term node: solar, documents/elements' positions in the sphere with respect to the whole search path's vectors are generated. The movement/attraction vector

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for each element is determined. Thus, compare to fig. 14, documents g, d, and c in fig. 15 are moved closer to the term node: solar because of the higher degrees of these documents' relevancies to the term solar.

9. Hemmje et al. anticipated claims 7 and 24 by the following:

"display means": page 259. A computer monitor display is inherently comprised of pixels. Hence, elements/documents that are relevant to each search statement of item nodes are moved to new relevant positions according to Hemmje's teaching – page 255, figs. 13-16, they are essentially moved in pixels.

10. Hemmje et al. anticipated claims 8 and 25 by the following:

"the step of applying scaling factors to the respective movement vectors according to the respective positions of the elements on the display means" – page 255, lines 19-24 and fig. 16.

By applying the scaling factor, and based on the elements' positions on the RelevanceSphere, the lower relevance elements are determined. Thus, elements e, b, and d in fig. 16 in the inner sphere can be extracted from the original outer sphere.

11. Hemmje et al. anticipated claims 9 and 26 by the following:

"the step of applying scaling factors comprises the step of selecting a scaling factor area distribution" - page 255, lines 19-24 and fig. 16.

12. Hemmje et al. anticipated claims 10 and 27 by the following:

“the step of defining the or each sort statement comprises the step of displaying a list of available sort parameters on the display means and selecting a set of sort parameters from the list.” - page 252, lines 27-33; p. 256, lines 3-14 and lines 27-41.

Applicants do not show how a list is displayed on the figures (see drawings objection for claim 10, page 2 above. However, Hemmje et al. disclose that users can select items nodes of interest, and then documents will be sorted and displayed in different levels. For example, users can decide to follow the search result by selecting an element/document to become the current item and requests to unfold its term sublevel – page 256, line 6.

NavigationCones implement navigations by unfolding alternating tree levels of term and document view – page 252, lines 28-32. Thus, terms and documents are sorted into tree levels, which would be displayed to users based on users' navigations. In other words, a sort statement would be performed when a user selects an item, starts clustering activities, increases terms' attractions, or reduces the document density in order to choose the most relevance documents to the search terms. Elements/documents are sorted and displayed in relevant positions to the searched term nodes to reflect their relevancies on the display – page 253, lines 28-30. Thus, items or elements on the display that are available for users to select are basically a list of sort parameters where users would select in order to search or define a sort statement as stated by the applicants.

13. Hemmje et al. anticipated claims 11 and 28 by the following:

“the step of defining the or each sort statement site comprises the step of selecting a respective position on the display means which correspond to a point on the circumference of a circle” – page 255, fig. 15 and lines 10-12; page 256, lines 31-41. According to fig. 15, an user selects the term node: solar to increase the term node's attraction, documents' positions in the sphere with respect to the whole search path's vectors are generated.

14. Hemmje et al. anticipated claims 12 and 29 by the following:

“the initial position of the elements is defined at the center of the circle” – page 256, lines 27-28. (The system transfers the retrieved documents into the sphere center until a search is conducted, then relevant documents/elements/data files will be repositioned to their new positions which would show the relevancies of those documents to the search term nodes.)

15. Hemmje et al. anticipated claims 13 and 30 by the following:

“wherein each element moves from its initial position towards a site which represents the most relevant sort statement for the respective data file” – page 255, fig. 16; page 256, lines 31-36.

16. Hemmje et al. anticipated claim 15 by the following:

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“the step of pre-selecting at least one sub-class of data files to be sorted” – page 251, third paragraph; page 252, lines 9-10 and lines 27-39; page 256, lines 3-14 and 27-41.

In the specification, page 9, first paragraph, applicants state, “Once the data has been restructured, the user is asked to define a data filter for reducing the amount of data to be processed. In step 12 the user is presented with a menu of available options on the display means. The options relate to the fields in the customer schedule of the call database. This step enables sub-classes of customers to be selected. For example, if the user is only interested in accessing data relating to customers in a certain postal district the filter is defined according to the postal district of interest. At this state the user can select as many sub-classes as desired. Once the filter has been defined the appropriate customer files are selected in step 14.” However, the data has been restructured according to page 8, last paragraph is because searches are conducted on customers who made calls to certain destination or user ISDN connection. Applicants’ filter is defined based users’ interest (as underlined above).

Hemmje et al. disclose on page 256, lines 2-14 that based on the initial search term “heat”, users can further select its sublevel term to continue the search in which documents/data files in this subset would be sorted and moved to new their positions which reflect their relevancies to the new sublevel search term.

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17. As per claim 14, Hemmje et al. does not suggest the limitation "storing of selected data files." However, it would have been obvious to a person having ordinary skill in the art to store selected data files for later use because this adds to the convenience of using the system. Without the storage of the selected data files the results of the search would be lost from session to session, thus resulting in lost time.

18. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hemmje et al. "LyberWorld – A Visualization User Interface Supporting Fulltext Retrieval", July 3, 1994, pp. 249-259, XP00475325 and Bryan et al. (USP 6664980), and further in view of Barry (USP 5408654).

Hemmje et al. and Bryan et al. do not fairly suggest restructuring a database into a series of individual data files. However, Barry teaches a method for sorting and reorganization of computer files, and more particularly, to a method for reorganizing a database index file – col. 1, lines 10-12. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to restructure/reorganize database files in order to search and retrieve relevant files quickly and efficiently.

19. Claims 18-19 and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hemmje et al. "LyberWorld – A Visualization User Interface Supporting Fulltext Retrieval", July 3, 1994, pp. 249-259, XP00475325 and Bryan et al. (USP 6664980), and further in view of Nolting et al. (USP

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6385301). According to the Amendment B, paper no. 5, page 4, Applicants teach “the call database of a large telecommunications company will contain valuable hidden information regarding groups of customers who have similar usage patterns etc.” On page 9 of the specification, lines 12-27, Applicants disclose further about calls that customers made to different destinations etc... Thus, Examiner interprets the limitation “calls” in claims mentioned above as “telephone calls”.

Hemmje et al. and Bryan et al. do not fairly suggest wherein the information stored as a plurality of data files and being sorted is information related to calls. However, Nolting et al. teach a method and system for accumulating call specific data for network communication and analyzing that data for a variety of purposes, for example to identify network traffic patterns, to identify specific types of users, etc. – col. 1, lines 14-18. Nolting et al. teach sorting of call records/files – col. 29, lines 1-24. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to sort information related to calls in order to gather vital statistics on telephone calls for support any related decision.

Response to Arguments

Applicant's arguments filed 2/6/04 regarding Hemmje fails to disclose “effecting movement of at least one element from an initial position on the display..., thereby to provide a visual indication of the data files being sorted on the display” the amended claim 1; “a visual signal processor...including speed

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and direction of the movement, or at least one element from an initial position on the display means towards one or more sort statements..." of the amended claim 17; and "the elements moving in steps and that a movement vector is determined for each step" of claim 6 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to LINH BLACK whose telephone number is 703-305-0317. The examiner can normally be reached on 8am - 5pm.

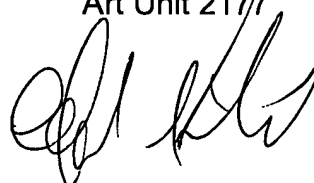
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN BREENE can be reached on 703-305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Linh Black

July 8, 2004

LINH BLACK
Examiner
Art Unit 2177



ALFORD KINDRED
PRIMARY EXAMINER